

## PATENT COOPERATION TREATY



## PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

REC'D 16 DEC 2004

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Applicant's or agent's file reference CO 0114 PCT/FoH		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07527	International filing date ( <i>day/month/year</i> ) 10.07.2003	Priority date ( <i>day/month/year</i> ) 10.07.2002	
International Patent Classification (IPC) or both national classification and IPC C21C5/56			
Applicant CORUS TECHNOLOGY BV			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 5 sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  14.01.2004		Date of completion of this report  13.12.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer  Ceulemans, J  Telephone No. +31 70 340-3157 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

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**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1, 2, 4-9 as originally filed  
3, 3a received on 11.10.2004 with letter of 08.10.2004

**Claims, Numbers**

1-23 received on 11.10.2004 with letter of 08.10.2004

**Drawings, Sheets**

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	2,9-17,19-20
	No: Claims	1,3-8,18,21-23
Inventive step (IS)	Yes: Claims	
	No: Claims	1-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**0. Clarity (Article 6 PCT)**

0.1. The application does not meet the requirements of Article 6 PCT because claim 1 is not clear.

Claim 1 is undefined because the characterising lance arrangement is defined as functional desideratum (result to be achieved when used), rather than defining the concrete design or constructional features which are essential to achieve the desired result.

0.2. The restricted referencing in claim 19 to a vessel according to claims 13-17 is confusing and renders the definition of the subject-matter of said claim unclear (Article 6 PCT). The reasons are the following :

- claims 13-17 are dependent on claims 1-12 and therefore can not be considered independently ;
- claim 19 contains all technical features of claim 18 but is constructed as an independent claim.

**1. Novelty and Inventive Step (Art.33(2) and (3) PCT)**

Reference is made to the following documents:

- D1: US-A-4195985
- D2: US-A-4399983
- D3: WO-A-0022176
- D4: EP-A-0735146
- D5: US-A-5681526
- D6 : US-B-6368548

After having taken the applicant's arguments into careful consideration, the present application is not considered to meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 18 and 21 is not new in the sense of Article 33(2) PCT.

1.1. The above-mentioned lack of clarity notwithstanding, the subject-matter of claims 1, 18 and 21 is not new in the sense of Article 33 (2) PCT, and therefore the requirements of Article 33(1) PCT are not met.

1.1. D1 discloses explicitly the effect of sucking in exhaust gas originating from the bath

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into the free oxygen jet generated by one of the blowing lances (see column 4, lines 26-41 and column 11, lines 52-59).

D2, D3 and D4 disclose independently of each other the same effect albeit implicit.

Therefore, the subject matter of claim 1 is not novel.

1.2. D2 discloses a method of reducing iron oxide comprising the steps of (see column 1, line 59-column 2, line 4) :

- supplying iron oxide to the vessel,
- supplying carbonaceous material to reduce the iron oxide,
- supplying oxygen to the iron oxide,

while using a vessel with a cover through which at least 2 oxygen lances penetrate and which create a downward suction of exhaust gases at the vicinity of the vessel walls and upward at the centre of the vessel (implicit).

Therefore the subject matter of claims 18 and 21 is not novel.

1.3. As a consequence, the subject matter of claims 1, 18 and 21 can also not be considered as involving an inventive step in accordance with Art.33 (3) PCT.

1.4. Dependent claims 2-17 and 19, 22 and 23 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT with respect to novelty and/or inventive step, the reasons being as follows:

- the subject matter of claim 2 has been disclosed in D5, as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include these features in the vessel described in document D1 in order to solve the problem posed (Art. 33(3) PCT).
- the subject matter of claims 3-8 and 22-23 has been disclosed in D1 and can therefore not be considered as novel (Art. 33(2) PCT).
- the subject matter of claims 9-12 and 16-17 has been disclosed in D4 as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include these features in the vessel described in document D1 in order to solve the problem posed (Art. 33(3) PCT).
- the subject matter of claims 13-15 and 19-20 has been disclosed in D6 as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include these features in the vessel described in

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document D1 in order to solve the problem posed (Art. 33(3) PCT).

**2. Industrial Applicability (Art. 33(4) PCT)**

The subject-matter of the present application concerns a vessel and process which can be applied for iron and steel making.